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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,345	08/30/2001	Jack Yiu-Bun Lee	17329-004001	1501

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EXAMINER	
DAVIS, CYNTHIA L	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/945,345	LEE, JACK YIU-BUN	
	Examiner	Art Unit	
	Cynthia L. Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 22-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,25,26 and 30* is/are rejected.

7)☒ Claim(s) *22-24,27-29,31 and 32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 2, 5-7, 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Schneider.

Regarding claim 2, initiating transmission of an intended group of packets, the intended group of packets including a set of data and error-correcting information for the set of data is disclosed in Zehavi, column 4, lines 59-60. Receiving an indication of at least some data, of the set of data, that failed to be correctly received at a receiver is disclosed in Zehavi, column 4, lines 61-63. In response to the indication, retransmitting a second group of packets, the second group of packets comprising less than all data, of the set of data that failed to be correctly received at the receiver, wherein less than all data that failed to be correctly received at the receiver is retransmitted in the retransmitting step, and the receiver will be able to obtain the all data, of the set of data, that failed to be correctly received at the receiver by performing error correction with the retransmitted second group of packets, once received, and correctly received portions of the intended group of packets, as received from the transmission that was initiated in the initiating step is disclosed in Zehavi, column 10, lines 12-16. Distributing video to a

plurality of receivers, applying forward error correction, and buffering data at a transmission server which transmits the intended group of packets and at each receiver which receives the intended group of packets to support error correction by both retransmission at the transmission server and the forward error correction at the receiver and to allow for continuous play of the video signal at each receiver is missing from Zehavi. However. Schneider discloses this at column 1, lines 28-32 (video distribution over a network that would have multiple receivers), column 5, lines 20-22 (FEC), and column 5, lines 52-55 (automatic retransmission requests) and column 6, lines 3-6 (the ARQ requests are given to the buffers). It would have been obvious to one skilled in the art at the time of the invention to use the video transmission, buffering, and error correction system of Schneider in the system of Zehavi. The motivation would be to ensure error free reception of the video data.

Regarding claim 5, the transmission of the intended group of packets to the receiver is not over the Internet is disclosed in Zehavi, column 1, lines 57-61, disclosing that the system is specifically designed for a CDMA cellular network.

Regarding claim 6, retransmitting is a unicasting is disclosed in Zehavi, column 10, lines 12-16 (the replacement frames are sent only to the requesting station).

Regarding claim 7, the indication is received, in the receiving step, via a unicast from the receiver is disclosed in Zehavi, column 10, lines 10-11.

Regarding claim 11, some packets of the intended group of packets were not correctly received at the receiver; and the method further comprises identifying a minimally-sized set of packets, of the some packets that were not correctly received at

the receiver, that would enable recovery at the receiver of all data of the set of data not correctly received at the receiver is disclosed in Zehavi, column 10, lines 12-16.

Regarding claim 12, the intended group of packets includes D intended data packets and R intended redundancy packets and no other data packets or redundancy packets; M packets of the intended group of packets were not correctly received at the receiver, wherein M is greater than R; and the step of identifying a minimally-sized set of packets comprises identifying a set of M minus R packets, of the M packets that were not correctly received at the receiver, wherein D and R are positive integers, and M is a positive integer greater than R is disclosed in Zehavi, column 10, lines 12-16 (M-R would be the number of packets not able to be reconstructed from the received packets).

Regarding claim 14, at the receiver: receiving the retransmitted second group of packets; and performing erasure correction on the second group of packets and the correctly received portions of the intended group of packets whose transmission was initiated in the initiating step to thereby obtain the all data of the set of data that failed to be correctly received at the receiver is disclosed in Zehavi, column 10, lines 12-16 (disclosing the second group of packets) and column 8, lines 19-24 (disclosing erasure correction).

3. Claims 3, 4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Schneider in further view of Chou.

Regarding claim 3, the communication system comprises a residential broadband network is missing from Zehavi. However, Chou discloses in column 1, lines

14-20, transmitting media to home subscribers in a system that uses error correction and retransmission. It would have been obvious to one skilled in the art at the time of the invention to use the method of Zehavi in a residential broadband network. The motivation would be to use the method of Zehavi commercially for home subscribers to the internet.

Regarding claim 4, the transmission is a portion of a multicast of the video is missing from Zehavi. However, Chou discloses in column 1, lines 21-22 and 25-27, multicasting of video signals. It would have been obvious to one skilled in the art at the time of the invention to use the method of Zehavi to correct errors in a video multicast. The motivation would be to use the method of Zehavi commercially for home subscribers of video content.

Regarding claim 8, at the receiver: sending the indication, wherein the indication indicates less than all data, of the set of data, that failed to be correctly received at the receiver, wherein the retransmitting step includes retransmitting all data indicated in the indication is missing from Zehavi. However, Zehavi does disclose in column 10, lines 12-16, the transmitter deciding which packets, which are less than all of the lost data, to resend in response to a retransmission request. Also, Chou discloses in column 10, line 66-column 11, line 2, the receiver in a system deciding which packets out of a set of lost packets it needs replacements for, and getting those packets from the transmitter. It would have been obvious to one skilled in the art at the time of the invention to have the receiver decide which packets it wants retransmitted from the transmitter. The motivation would be to allow the individual receivers to decide what quality of

transmission they require, so as to avoid congestion on their particular connection (see Chou, column 2, lines 41-45).

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Chou and Brown.

Regarding claim 15, receiving packets from a packets, wherein the group of packets include data and error-correction information for the data is disclosed in Zehavi, column 4, lines 59-60. If packets received without error in the receiving step include less than all the data whereby some of the data has been lost, hereinafter referred to as lost data then: sending a message based on identity of at least some of the lost data is disclosed in Zehavi, column 4, lines 61-63. Receiving a retransmission triggered by the sent message, wherein the retransmission includes less than all of the lost data; and recovering all of the lost data using information from the packets received without error in the receiving packets step and using the received retransmission is disclosed in Zehavi, column 10, lines 12-16. The packets being multicast is missing from Zehavi. However, Chou discloses in column 1, line 26, multicasting of packets in a network. It would have been obvious to one skilled in the art at the time of the invention to use the system of Zehavi in a multicast network. The motivation would be to correct the errors in a multicast transmission. Buffering the received data at the receiver, including data of retransmission, to allow for continuous play of the video content received at the receiver is missing from Zehavi. However, Brown discloses in column 7, lines 14-17, buffering at a receiver to allow for continuous media play. It would have been obvious to one skilled

in the art at the time of the invention to use the buffer of Brown in the system of Schneider. The motivation would be to allow for continuous media play.

Regarding claim 16, the message identifies and requests retransmission of less than all lost data packets of the multicasted group of packets is missing from Zehavi. However, Zehavi does disclose in column 10, lines 12-16, the transmitter deciding which packets, which are less than all of the lost data, to resend in response to a retransmission request. Also, Chou discloses in column 10, line 66-column 11, line 2, the receiver in a system deciding which packets out of a set of lost packets it needs replacements for, and getting those packets from the transmitter. It would have been obvious to one skilled in the art at the time of the invention to have the receiver indicate to the transmitter which packets it wants to have retransmitted. The motivation would be to allow the individual receivers to decide what quality of transmission they require, so as to avoid congestion on their particular connection (see Chou, column 2, lines 41-45). The retransmission includes retransmission of the less than all lost data packets of the multicasted group of packets is disclosed in Zehavi, column 10, lines 110-16.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Chou and Schneider in further view of Ayanoglu I (5600663).

Regarding claim 9, the sending step is initiated without waiting for all packets of the intended group of packets to either arrive at the receiver or be determined as being lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It

would have been obvious to one skilled in the art at the time of the invention to request retransmission before all of the packets had arrived. The motivation would be to request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

Regarding claim 10, the retransmitting step is initiated before every packet of the intended group of packets has either arrived at the receiver or been lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that retransmits when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It would have been obvious to one skilled in the art at the time of the invention to retransmit before all of the packets had arrived. The motivation would be to retransmit as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Chou and Brown in further view of Ayanoglu I (5600663).

Regarding claim 17, the sending step includes sending at least a portion of the message, even before every packet of the multicasted group of packets has either arrived at the receiver or been determined as lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold, which may occur before all of the group of packets arrives. It would have been obvious to one skilled in the art at the time of the invention to request retransmission before all of the packets had

arrived. The motivation would be to request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zehavi in view of Schneider in further view of Ayanoglu I (5600663). At the receiver; initiating sending at least a portion of the indication if at least R plus one packets of the intended group of packets were not correctly received at the receiver, even before every packet of the intended group of packets has either arrived at the receiver or been determined as being lost to the receiver is missing from Zehavi. However, Ayanoglu discloses in column 5, lines 52 and 57-58, a system that requests retransmission when the number of errors exceeds a threshold. It would have been obvious to one skilled in the art at the time of the invention to request retransmission when the number of errors exceeds the threshold R. The motivation would be to request retransmission as soon as the system becomes aware that it is necessary, so as to have to correct data on hand sooner.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider in view of Brown. Buffering video data, retransmission data for implementing automatic repeat request and redundancy data for implementing forward error correction at a server and each of a plurality of receivers in the network to support error correction by both retransmission under the automatic repeat request and the forward error correction, and performing both retransmission under the automatic repeat request and the forward error correction to correct errors in video data received at each receiver to reduce traffic overhead at the server is disclosed Schneider, column 1, lines 28-32 (video distribution over a network that would have multiple receivers), column 5, lines

20-22 (FEC), and column 5, lines 52-55 (automatic retransmission requests) and column 6, lines 3-6 (the ARQ requests are given to the buffers). Configuring buffer space at the receiver and each receiver to allow for continuous play of the video received at the receiver is not specifically disclosed in Schneider. However, Brown discloses in column 7, lines 14-17, buffering at a receiver to allow for continuous media play. It would have been obvious to one skilled in the art at the time of the invention to use the buffer of Brown in the system of Schneider. The motivation would be to allow for continuous media play.

9. Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider in view of Brown in further view of Ayanoglu II (5717689).

Regarding claim 26, performing retransmission under the ARQ first upon detecting an transmission error, and after a retransmission is performed, performing the FEC on the retransmittted data is not specifically disclosed in Schneider. However, Schneider does disclose performing ARQ and FEC on received data in column 5, lines 20-22 (FEC), and column 5, lines 52-55 (automatic retransmission requests). Further, Ayanoglu II (5717689) discloses in column 2, lines 17-21, using both selective ARQ and FEC, which would vary the manner and order of the error correction applied. It would have been obvious to one skilled in the art at the time of the invention to perform the FEC after the ARQ. The motivation would be to ensure reliable transportation of cells.

Regarding claim 30, upon detecting at least one error in received data, performing the FEC on the received data, and subsequently requesting retransmission under the automatic repeat request when there is at least one error in the received data

after the performance of the forward error correction is not specifically disclosed in Schneider. However, Schneider does disclose performing ARQ and FEC on received data in column 5, lines 20-22 (FEC), and column 5, lines 52-55 (automatic retransmission requests). Further, Ayanoglu II (5717689) discloses in column 2, lines 17-21, using both selective ARQ and FEC, which would vary the manner and order of the error correction applied. It would have been obvious to one skilled in the art at the time of the invention to perform the FEC before the ARQ. The motivation would be to ensure reliable transportation of cells.

Allowable Subject Matter

10. Claims 22-24, 27-29, and 31-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLD
1/23/2006

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1/23/06

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